

California Monthly Climate Summary April 2007

Weather Highlights

April 2007 continued this year's trend of above-mean temperatures and below average precipitation. For the National Weather Service Co-Operative Network, the statewide average mean temperature was 56.3°F which is 0.8 degrees higher than the long-term average. The statewide average maximum temperature was 68.5°F, which is 0.5°F greater than the long-term average. The statewide average minimum temperature was 44.1°F which is 1.1°F greater than the long-term average. Statewide average precipitation in April was closer to normal and was almost twice as much as March's statewide average of 0.59 inches. The National Weather Service Cooperative Network showed statewide average precipitation in April of 1.04 inches which is 0.34 inches below the long-term average. Every month of 2007 has recorded below normal precipitation and has resulted in a cumulative deficit of 6.7 inches for the calendar year.

April began with a weak low pressure system passing over the state with showers spreading from northern California into southern California. Unstable air behind the front led to some thunderstorms. Offshore flow set in afterward leading to warm and dry weather. The second week of April brought a split-system into the state's northern and southern edges. Strong winds accompanied this system with wind gusts between 45 and 60 mph observed in Kern County. A system moving through at the end of the second week brought an inch of snow to the Tehachapi Mountains. A second system followed closely on its heels bringing record precipitation to Bakersfield on April 15th. The 0.22 inches that fell on the 15th almost doubled the old record of 0.12 inches that was set back in 1967. The two-day total of 0.47 inches in Bakersfield was more than the rain that fell during the entire month of March. The storminess continued during the third week of April with more wind and only light showers. The cooler air from these systems led to cooler than average temperatures with some new daily low maximum records set. This didn't last long as April finished with high pressure building across the state and temperatures soaring into the 100s in the southeast. Imperial, California set a new all-time warmest April day on the 29th with a 106. The previous record was 104 set on April 7, 1989. Bakersfield and Fresno recorded their first 90 degree days of the year on the 27th.

Preliminary records reported on the National Weather Service Record Event Report show that statewide there were 46 temperature records tied or broken and 4 precipitation records tied or broken for the month. There were 13 days in April with a record set somewhere in California with the majority of these coming in the last half of the month. It should be noted that this data is preliminary and may not include all records set. New daily maximum temperature records account for 29 of the 46 reports. Statewide extremes from the California Data Exchange Center's (CDEC) network of temperature gages are shown below.

Precipitation in April was much closer to normal than March. The largest amount of precipitation recorded for April 2007 was at Strawberry Valley where 6.1 inches of rain fell. This is 104% of the average April rainfall at this site. Three stations in the state reported zero precipitation for the month. The 8-Station Index for northern California precipitation showed 15 days of precipitation for a total of 3.1 inches. This is 79% of the long-term average for April. A table of October through April 8-Station Index totals can

be found at the end of the summary. In the southern part of the state, the downtown Los Angeles station recorded only 0.74 inches of rain in April which keeps it on track for its driest year on record with a total of 3.21 inches. The previous driest year on record was from July 1960 to June 1961 when only 4.85 inches fell. More recently, from July 2001 to June 2002, 4.92 inches of rain fell. Statewide, the average precipitation for April was 75% of the long-term average based on the California Data Exchange Center (CDEC) gages. Precipitation percentages by region from the CDEC gages are shown in a table at the end of this document.

The continuing dry weather over California has been reflected in the Drought Monitor Maps which can be found on the National Drought Mitigation Center's (NDMC) website <http://drought.unl.edu/dm/>. These maps are largely a reflection of precipitation and soil moisture deficit estimates. Only the northwest part of the state is depicted as not having dry conditions. Most of the rest of California is depicted as having abnormally dry (D0) or moderate drought conditions (D1). The southern parts of the state are depicted by the NDMC as being in either severe drought (D2) or extreme drought (D3). Maps are updated weekly.

ENSO Conditions and Long-Range Outlooks

The El Niño/Southern Oscillation (ENSO) is being classified as a neutral pattern. Equatorial sea surface temperature anomalies for the eastern tropical Pacific are running near -0.5 degrees Celsius. Continuing downward trends towards La Nina conditions are possible in the next couple of months. Most of the forecast models suggest ENSO neutral conditions persisting through spring. More information on the topic can be found at the Climate Prediction Center's web site: http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/. Current climate indicators including ENSO conditions indicate a warmer than average May through July period for most of California and equal chance of above, near, or below average temperatures for coastal Southern California. Precipitation forecasts show below normal totals for the next three months for the northern end of the state and equal chance of above, near, or below normal precipitation for the rest of the state. Long-range outlook plots of precipitation and temperature can be found at: <http://www.wrcc.dri.edu/longrang/>. General weather information of interest can be found at <http://www.noaa.gov/>. For anomaly information please see http://www.wrcc.dri.edu/anom/cal_anom.html.

Agricultural Data

April's weather was suitable for continued planting and crop growth. Some dryland grains are suffering from the continued below-average precipitation. Many orchards have needed irrigation due to the low rainfall. Some orchards suffered minor damage from the winds. Grape vines are continuing to leaf out. Fruit trees are starting to form fruit with cherries and apricots expected to yield good crops. Rice fields were flooded and prepped for planting with some planting taking place. The second cutting of Alfalfa continued in April. Field corn, sunflower and vine seed fields were planted. Some cotton fields were disced without planting due to low cotton prices. Vegetable growth is going well and harvesting of vegetable crops such as asparagus, bok choy, broccoli, cabbage, and others continued. Range conditions have suffered due to the lack of precipitation this winter. Some livestock are being put on irrigated fields and some herds are being thinned due to dry conditions. For further crop information, please see <http://www.nass.usda.gov/index.asp>

Snow Data

The snow water equivalent at the beginning of May is only 25% of average statewide compared to last year's May 1st value of 185%. These values are approximately 20% of the average April 1 values and represent a 15 percentage point loss for the month.

The following snow product for the climate summary is provided by the University of California, Merced, University of California, Santa Barbara, and the National Snow and Ice Data Center under NASA Grant NNG04GC52 (REASoN CAN 'Multi-resolution snow products for the hydrologic sciences'). For further information or comments/suggestions please contact Robert Rice (rrice@ucmerced.edu or (209)228-4397) or Roger Bales at University of California, Merced. A more detailed product is available on the state climatologist web site under the climate data and information link under the heading monthly SCA report.

The analysis of Snow Covered Area (SCA) is derived from MODIS (Moderate Resolution Imaging Spectroradiometer) aboard NASA's Terra and Aquas satellites. Data from MODIS are processed to provide a resolution of 500 meters and a fractional SCA product where each pixel can range in value between 0 and 100% (e.g. 50%=50% of the 500 meter pixel is covered by snow) as opposed to the operational binary product that defines a pixel as either snow or snow free. The MODIS SCA product is available on a daily basis, but viewable areas are subject to cloud cover. In addition, tree canopies mask a portion of the SCA and should be viewed accordingly based on the vegetation characteristics of each hydrologic unit and watershed.

This analysis covers the Sierra Nevada and various river basins, with Figure 1 highlighting the SCA over the Sierra Nevada for April 2007 compared to 2005. Figure 2 shows the percent change in SCA from the end of March to the end of April 2007. As can be seen from Figures 1 and 2, April 2007 recorded little snow in the Sierras and is much less than 2005. Year-to-year comparative analyses of this product will be used until sufficient data exists to prepare a suitable climatology for comparison.

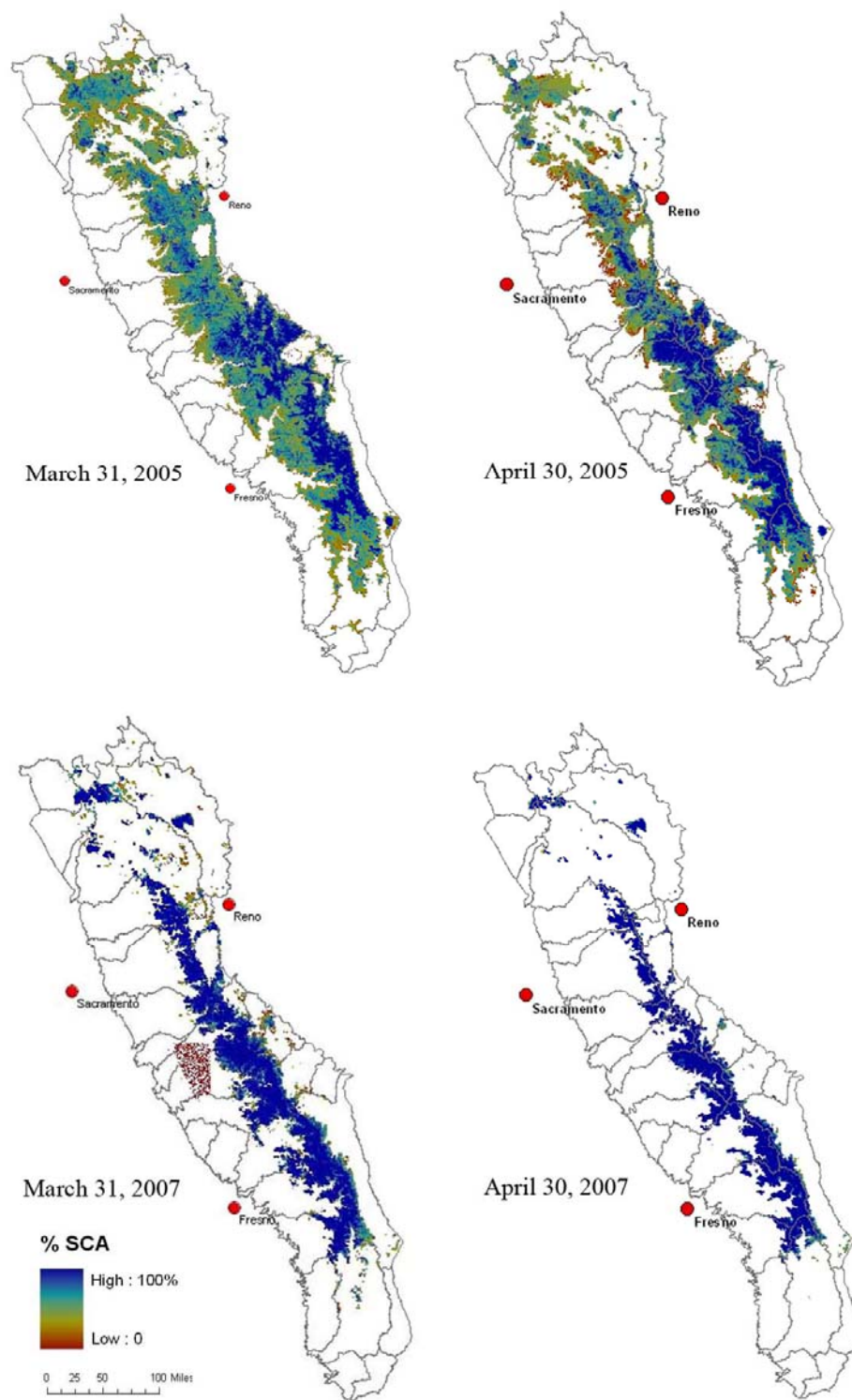


Figure 1. SCA over the **Sierra Nevada** on March 31 and April 30, 2005 and March 31 and April 30, 2007 outlined by the individual watersheds.

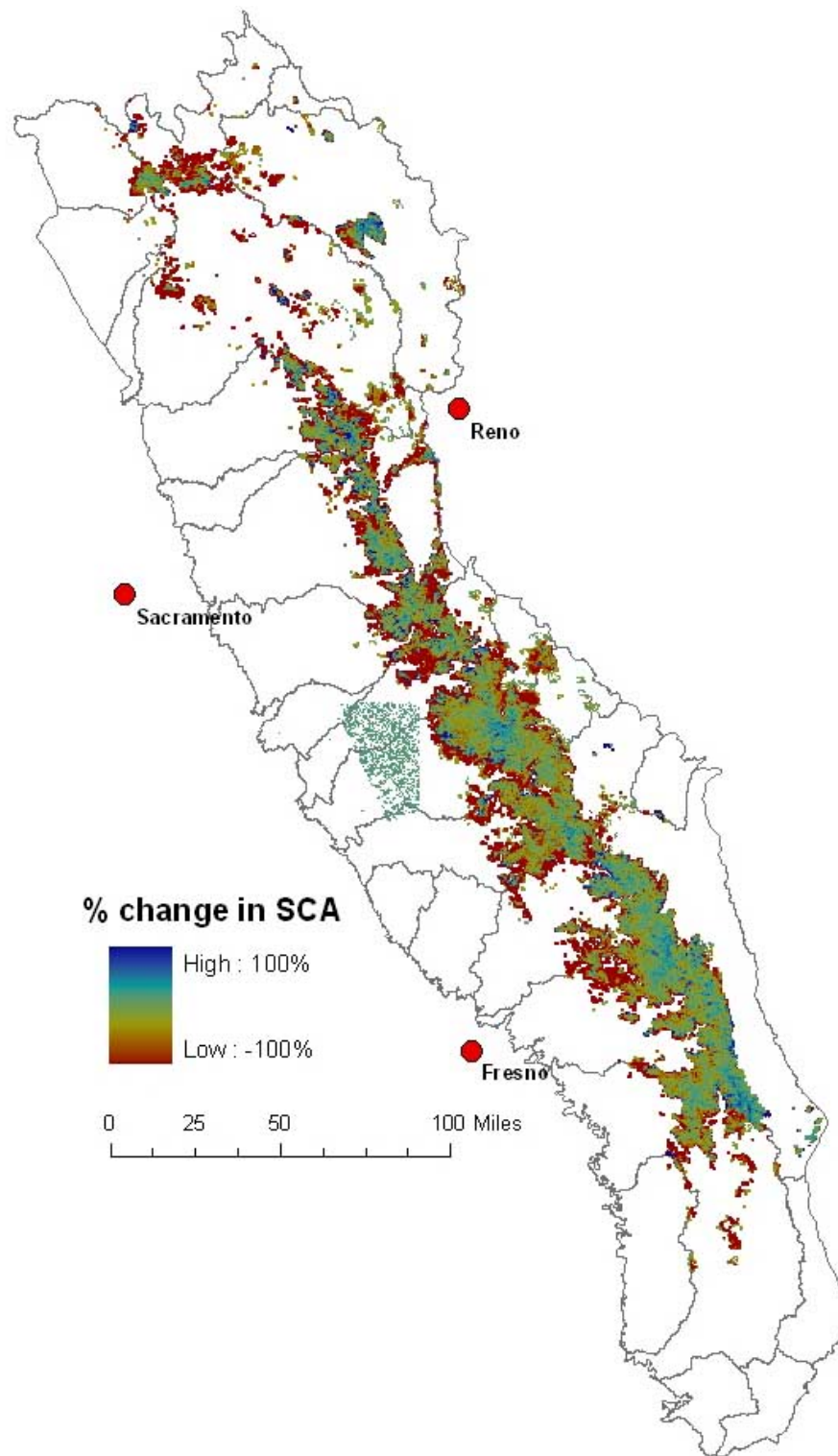


Figure 2. The graphic shows the change in SCA between March 31 and April 30, 2007 in which 100% represents an increase in SCA and -100% represents a decline in SCA across a 500 meter pixel.

Other Climate Summaries

[California Climate Tracker](#) (new product of Western Region Climate Center)

[Golden Gate Weather Service Climate Summary](#)

[NOAA Monthly State of the Climate Report](#)

Statewide Extremes

High Temperature – 106 deg F (Imperial, Colorado River Desert)

Low Temperature - 0 deg F (Bishop Pass, Tulare)

High Precipitation – 6.1 inches (Strawberry Valley, Sacramento Basin)

Low Precipitation –0 inches (3 stations)

Statewide Precipitation Statistics

Hydrologic Region	Region Weight	Basins Reporting			Stations Reporting			Percent of Historic Average	
		Basins	Apr	Oct-Apr	Stations	Apr	Oct-Apr	Apr	Oct-Apr
NORTH COAST	0.27	5	3	3	19	9	8	91.2%	84%
SAN FRANCISCO BAY	0.03	2	2	2	6	2	2	63.3%	75%
CENTRAL COAST	0.06	3	2	1	11	3	2	48.4%	52%
SOUTH COAST	0.06	3	3	3	15	12	12	46.8%	33%
SACRAMENTO RIVER	0.26	5	5	5	43	25	25	78.6%	67%
SAN JOAQUIN RIVER	0.12	6	6	6	25	16	16	64.8%	66%
TULARE LAKE	0.07	5	5	5	28	24	23	22.4%	63%
NORTH LAHONTAN	0.04	3	3	3	14	11	10	111.0%	61%
SOUTH LAHONTAN	0.06	3	2	2	15	7	6	66.2%	30%
COLORADO RIVER	0.03	1	1	1	6	4	3	48.3%	43%
STATEWIDE WEIGHTED AVERAGE	1.00	36	32	31	182	113	107	75.4%	65%

Statewide Mean Temperature Data by Hydrologic Region (degrees F)

Hydrologic Region	No. Stations	Minimum	Average	Maximum
North Coast	33	30.5	49.1	77.3
SF Bay	21	39.5	55.0	76.8
Central Coast	32	40.3	54.8	74.4
South Coast	68	39.5	57.4	84.4
Sacramento	92	29.5	51.3	79.4
San Joaquin	69	32.7	52.6	76.5
Tulare Lake	18	19.0	44.8	75.3
North Lahontan	28	16.8	40.5	65.9
South Lahontan	24	24.8	49.5	75.2
Colorado River Desert	22	50.3	69.7	89.8
Statewide Weighted Average	407	30.8	51.1	77.6

Northern California 8-Station Index October through April Values

Month	Precipitation (inches)	% of Average
October	0.5	17
November	5.7	90
December	8.5	101
January	1.4	16
February	13.6	170
March	1.6	23
April	3.1	79